

July 2006

# WEAPONS ACQUISITION

## DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems



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## Why GAO Did This Study

A critical element in the life cycle of a weapon system is the availability of the item's technical data—recorded information used to define a design and to produce, support, maintain, or operate the item. Because a weapon system may remain in the defense inventory for decades following initial acquisition, technical data decisions made during acquisition can have far-reaching implications over its life cycle. In August 2004, GAO recommended that the Department of Defense (DOD) consider requiring program offices to develop acquisition strategies that provide for future delivery of technical data should the need arise to select an alternative source for logistics support or to offer the work out for competition. For this review, GAO (1) evaluated how sustainment plans for Army and Air Force weapon systems had been affected by technical data rights and (2) examined requirements for obtaining technical data rights under current DOD acquisition policies.

## What GAO Recommends

To ensure that DOD can support sustainment plans for weapon systems throughout their life cycle, including revisions to these plans aimed at achieving cost savings and complying with legislative requirements, GAO recommends improvements in DOD's acquisition policies regarding the acquisition of technical data. DOD concurred with GAO's recommendations.

[www.gao.gov/cgi-bin/getrpt?GAO-06-839](http://www.gao.gov/cgi-bin/getrpt?GAO-06-839).

To view the full product, including the scope and methodology, click on the link above. For more information, contact William M. Solis at (202) 512-5140 or [solisw@gao.gov](mailto:solisw@gao.gov).

# WEAPONS ACQUISITION

## DOD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems

### What GAO Found

The Army and the Air Force have encountered limitations in their sustainment plans for some fielded weapon systems because they lacked needed technical data rights. The lack of technical data rights has limited the services' flexibility to make changes to sustainment plans that are aimed at achieving cost savings and meeting legislative requirements regarding depot maintenance capabilities. GAO identified seven weapon system programs that encountered such limitations—C-17, F-22, and C-130J aircraft, Up-armored High-Mobility Multipurpose Wheeled Vehicle, Stryker family of vehicles, Airborne Warning and Control System aircraft, and M4 carbine. Although the circumstances surrounding each case were unique, earlier decisions made on technical data rights during system acquisition were cited as a primary reason for the limitations subsequently encountered. As a result of the limitations encountered, the services had to alter their plans for developing maintenance capability at public depots, developing new sources of supply to increase production, or soliciting competitive offers for the acquisition of spare parts and components to reduce sustainment costs. For example, the Air Force identified a need to develop a core maintenance capability for the C-17 at government depots to ensure it had the ability to support national defense emergencies, but it lacked the requisite technical data rights. To mitigate this limitation, the Air Force is seeking to form partnerships with C-17 sub-vendors. However, according to Air Force officials, some sub-vendors have declined to provide the needed technical data needed to develop core capability. Although GAO did not assess the rationale for the decisions made on technical data rights during system acquisition, several factors, such as the extent the system incorporates technology that was not developed with government funding and the potential for changes in the technical data over the weapon system's life cycle, may complicate program managers' decisions.

Current DOD acquisition policies do not specifically address long-term technical data rights for weapon system sustainment. For example, DOD's policies do not require program managers to assess long-term needs for technical data rights to support weapon systems and, correspondingly, to develop acquisition strategies that address those needs. DOD, as part of the department's acquisition reforms and performance-based strategies, has deemphasized the acquisition of technical data rights. Although GAO has recommended that DOD emphasize the need for technical data rights, DOD has not implemented these recommendations. The Army and the Air Force have recognized weaknesses in their approaches to assessing and securing technical data rights and have begun to address these weaknesses by developing more structured approaches. However, DOD acquisition policies do not facilitate these efforts. Unless DOD assesses and secures its rights for the use of technical data early in the weapon system acquisition process when it has the greatest leverage to negotiate, DOD may face later challenges in sustaining weapon systems over their life cycle.

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## Abbreviations

AWACS	Airborne Warning and Control System
DAPWG	Defense Acquisition Policy Working Group
DOD	Department of Defense
HMMWV	High-Mobility Multipurpose Wheeled Vehicle
NAVAIR	Naval Aviation Systems Command
NAVSEA	Naval Sea Systems Command
OSD	Office of the Secretary of Defense
SSTS	sustainment systems technical support
TACOM	Tank-automotive and Armaments Command
USD/ATL	Under Secretary of Defense (Acquisition, Technology, and Logistics)

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United States Government Accountability Office  
Washington, D.C. 20548

July 14, 2006

The Honorable John Warner  
Chairman  
The Honorable Carl Levin  
Ranking Minority Member  
Committee on Armed Services  
United States Senate

The Honorable Duncan L. Hunter  
Chairman  
The Honorable Ike Skelton  
Ranking Minority Member  
Committee on Armed Services  
House of Representatives

A critical element in the life cycle of a weapon system is the availability of the item's technical data—that is, recorded information used to define a design and to produce, support, maintain, or operate the item.<sup>1</sup> The Department of Defense (DOD) negotiates its rights to weapon system technical data when it contracts with defense equipment manufacturers. During the acquisition process, DOD determines what technical data rights it requires from the manufacturer in order to meet its future weapon support needs. Because a weapon system may remain in the defense inventory for decades following initial acquisition, decisions made at the time of acquisition can have far-reaching implications for weapon system support over the system's life cycle, and the failure to negotiate adequate technical data rights may impede the government's ability to sustain the weapon system. For example, DOD would need technical data rights to develop new sources of supply, to recompute follow-on procurements of equipment, or to develop depot-level maintenance capabilities. In an August 2004 report,<sup>2</sup> we recommended that DOD consider requiring

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<sup>1</sup>Section 252.227-7013 of the Defense Federal Acquisition Regulation Supplement defines technical data as recorded information, regardless of the form or method of the recording, of scientific or technical nature, including computer software documentation. Technical data for weapon systems include drawings, specifications, standards, and other details necessary to ensure the adequacy of item performance, as well as manuals that contain instructions for installation, operation, maintenance, and other actions needed to support weapon systems.

<sup>2</sup>GAO, *Defense Management: Opportunities to Enhance the Implementation of Performance-Based Logistics*, GAO-04-715 (Washington, D.C.: Aug. 16, 2004).

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program offices to develop acquisition strategies that provide for a future delivery of technical data should the need arise to select an alternative source for logistics support or to offer the work out for competition. DOD concurred with our recommendation.

This report responds to a provision in a House Report for the fiscal year 2006 Defense Authorization Bill<sup>3</sup> that we follow up on our August 2004 report and review DOD's technical data policies affecting the sustainment of fielded weapon systems, as well as other issues related to technical data. In February 2006, we briefed your offices on our preliminary observations (see app. I). This report updates and expands on the information in that briefing and provides recommendations to the Secretary of Defense. Specifically, our objectives were to (1) evaluate how Army and Air Force sustainment plans for fielded weapon systems had been affected by technical data rights and (2) examine requirements for obtaining technical data rights under current DOD acquisition policies. The House Report also asked us to review the military services' access to technical data to support field maintenance of weapon systems and to examine the costs for gaining such access. These issues are addressed in appendix I.

To conduct our review, we met with Army and Air Force acquisition and logistics officials to identify sustainment plans for fielded weapon systems that may have been affected by the technical data rights available to the government. We discussed, and obtained supporting documentation on, the circumstances surrounding these cases, the extent that a lack of technical data rights for these systems was a factor, and the effect on the systems' sustainment plans. We did not assess the rationale for the decisions made on technical data rights during system acquisition, nor did we determine the extent that program offices complied with acquisition policies regarding technical data that existed at the time of the acquisition. We analyzed current DOD acquisition policies and guidance, interviewed DOD and service officials, and collected DOD correspondence addressing our August 2004 recommendation. We met with Army and Air Force logistics officials to obtain information on their efforts to review acquisition policies and practices regarding technical data rights. We determined that the data used were sufficiently reliable for our purposes. We conducted our review from October 2005 through May 2006 in accordance with generally accepted government auditing standards.

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<sup>3</sup>H.R. Rep. No. 109-89 at 302.

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The Scope and Methodology section contains more detailed information about the work we performed.

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## Results in Brief

The Army and the Air Force have encountered limitations in their sustainment plans for some fielded weapon systems because they lacked needed technical data rights. The lack of technical data rights has limited the services' flexibility to make changes to sustainment plans that are aimed at achieving cost savings and meeting legislative requirements regarding depot maintenance capabilities. During our review we identified seven Army and Air Force weapon system programs where these military services encountered limitations in implementing revisions to sustainment plans—C-17 aircraft, F-22 aircraft, C-130J aircraft, Up-armored High-Mobility Multipurpose Wheeled Vehicle (HMMWV), Stryker family of vehicles, Airborne Warning and Control System (AWACS) aircraft, and M4 carbine. Although the circumstances surrounding each case were unique, earlier decisions made on technical data rights during system acquisition were cited as a primary reason for the limitations subsequently encountered. As a result of the limitations encountered due to the lack of technical data rights, the services had to alter their plans for developing maintenance capability at public depots, new sources of supply to increase production, or competitive offers for the acquisition of spare parts and components to reduce sustainment costs. For example, the Air Force identified a need to develop a capability to perform maintenance on the C-17 at government depots but lacked the requisite technical data rights. Consequently, the Air Force is seeking to form partnerships with C-17 sub-vendors to develop its depot maintenance capability. Its efforts to form these partnerships have had mixed results, according to Air Force officials, because some sub-vendors have declined to provide the needed technical data. Although we did not assess the rationale for the decisions made on technical data rights during the acquisition of these seven systems, there are several factors that may complicate program managers' decisions regarding technical data rights. These factors include the contractors' interests in protecting their intellectual property rights, the extent the system being acquired incorporates technology that was not developed with government funding, the potential for changes in the technical data over the weapon system's life cycle, the extent to which long-term sustainment strategies may require rights to technical data versus access to the data, the numerous funding and capability trade-offs program managers face during the acquisition of a weapon system, the long life cycle of many weapon systems, and changes in DOD policies regarding the acquisition of technical data and the implementation of performance-based logistics.



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Despite the challenges faced by program managers in determining long-term needs for technical data rights and the implications of their decisions for weapon system sustainment, current DOD acquisition policies do not specifically address long-term technical data rights for weapon system sustainment. For example, DOD's current acquisition policies do not require program managers to assess long-term needs for technical data rights to support weapon systems and, correspondingly, to develop acquisition strategies that address those needs. DOD guidance and policy changes, as part of the department's acquisition reforms and performance-based strategies, have deemphasized the acquisition of technical data rights. DOD also has not implemented our August 2004 recommendation for developing technical data acquisition strategies, although it has recently reiterated its intent to do so. In the absence of a DOD-wide policy on technical data rights, the Army and the Air Force are working independently to develop structured approaches for assessing technical data requirements and securing rights to these data. Their efforts, as well as our prior and current work, show that it is during the development of the solicitation and the subsequent negotiation of a proposed contract that the government is in the best position to negotiate and secure required technical data rights. In addition, the Air Force is pursuing the use of priced options—negotiated in weapon system acquisition contracts—to retain the option for acquiring technical data rights at some point later in the weapon system's life cycle. Army and Air Force logistics officials told us that their efforts would benefit from having a DOD policy that specifically addresses long-term needs for technical data rights supporting weapon system sustainment.

To ensure that DOD can support sustainment plans for weapon systems throughout their life cycle, we are recommending improvements in DOD's acquisition policies regarding the acquisition of technical data. In commenting on a draft of this report, DOD concurred with our report and recommendations. DOD's response is included in appendix II.

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## Background

In recent years, DOD has taken steps to improve its processes for acquiring and sustaining weapon systems. As part of these improvements, program managers are now responsible for the total life-cycle management of a weapon system, to include the sustainment of the system. In addition, DOD has directed weapon system program managers to develop acquisition strategies that maximize competition, innovation, and interoperability and the use of commercial, rather than military-unique,

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items to reduce costs.<sup>4</sup> Within the area of weapon system sustainment, DOD is pursuing the use of performance-based logistics as the preferred support strategy for its weapon systems. Performance-based logistics, a variation on other contractor logistics support strategies calling for the long-term support of weapon systems, involves defining a level of performance that the weapon system is to achieve over a period of time at a fixed cost to the government.

Technical data rights can affect DOD's plans to sustain weapon systems throughout their life cycle. For example, DOD would need technical data rights if it opts to reduce spare parts costs by developing new sources of supply, to meet wartime surge requirements by contracting with additional equipment suppliers, or to reduce system acquisition costs by recompeting follow-on procurements of the equipment. In addition, DOD may need to develop depot-level maintenance capabilities for its weapon systems at government depots in order to meet legislative requirements. DOD is required under 10 U.S.C. 2464 to identify and maintain within government-owned and government-operated facilities a core logistics capability, including the equipment, personnel, and technical competence identified as necessary for national defense emergencies and contingencies. Under 10 U.S.C. 2466, not more than 50 percent of the funds made available in a fiscal year to a military department or defense agency for depot-level repair and maintenance can be used to contract for performance by nonfederal personnel. These provisions can limit the amount of depot-level maintenance that can be performed by contractors. Finally, DOD would also need technical data rights for a weapon system should a contractor fail to perform, including a contractor working under a performance-based logistics arrangement. DOD has referred to this contingency as an "exit strategy."

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<sup>4</sup>DOD Directive 5000.1, *The Defense Acquisition System*, May 12, 2003.

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## Army and Air Force Encountered Limitations in Their Sustainment Plans for Some Fielded Weapon Systems

The Army and the Air Force have encountered limitations in their sustainment plans for some fielded weapon systems because they lacked needed technical data rights. The lack of technical data rights has limited the services' flexibility to make changes to sustainment plans that are aimed at achieving cost savings and meeting legislative requirements regarding depot maintenance capabilities. During our review we identified seven weapon system programs where these military services encountered limitations in their sustainment plans. Although the circumstances surrounding each case were unique, earlier decisions made on technical data rights during system acquisition were cited as a primary reason for the limitations subsequently encountered. As a result, the services had to alter their plans for developing maintenance capability at public depots, new sources of supply to increase production, or competitive offers for the acquisition of spare parts and components to reduce sustainment costs. In at least three of the cases, the military service made attempts to obtain needed technical data subsequent to the system acquisition but found that the equipment manufacturer declined to provide the data or that acquiring the data would be too expensive. We did not assess the rationale for the decisions made on technical data rights during the acquisition of these systems.

The seven weapon system programs we identified where a lack of technical data rights affected the implementation of sustainment plans are summarized below:

- *C-17 aircraft:* When the Air Force began acquisition of the C-17 aircraft, it did not acquire technical data rights needed to support maintenance of the aircraft at public depots. According to a program official, the Air Force did not consider the aircraft's depot maintenance workload as necessary to support DOD's depot maintenance core capability. Subsequently, however, the Air Force's 2001 depot maintenance core assessment identified the C-17 aircraft workload as necessary to support core capability. The Air Force determined that it did not have the technical data rights needed to perform the required maintenance. According to C-17 program officials, the C-17 prime contractor did not acquire data rights for C-17 components provided by sub-vendors and consequently was not able to provide the needed data rights to the Air Force. The prime contractor has encouraged its sub-vendors to cooperate with the Air Force in establishing partnerships to accomplish the needed core depot maintenance. Under these partnerships, Air Force depots would provide the facilities and labor needed to perform

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the core depot maintenance work, and the sub-vendor would provide the required technical data. According to Air Force officials, there are some instances where the sub-vendor is unwilling to provide the needed technical data. For example, in the case of the C-17's inertial navigation unit, the sub-vendor maintains that the inertial navigation unit is a commercial derivative item and the technical data needed to repair the item are proprietary. As of April 18, 2006, the sub-vendor was declining to provide the technical data needed to the Air Force. Without the rights to the technical data or a partnership with the sub-vendor, the Air Force cannot develop a core maintenance capability for this equipment item.

- *F-22 aircraft:* The acquisition of the Air Force's F-22 aircraft did not include all of the technical data needed for establishing required core capability workload at Air Force depots. Early in the F-22 aircraft's acquisition, the Air Force planned to use contractors to provide needed depot-level maintenance and therefore decided not to acquire some technical data rights from sub-vendors in order to reduce the aircraft's acquisition cost. Subsequently, however, the Air Force determined that portions of the F-22 workload were needed to satisfy core depot maintenance requirements. The Air Force is currently negotiating contracts for the technical data rights needed to develop depot-level maintenance capability. While the Air Force has negotiated contracts to acquire technical data for four F-22 aircraft components, F-22 program officials expressed concern that it may become difficult to successfully negotiate rights to all components.
- *C-130J aircraft:* The Air Force purchased the C-130J aircraft as a commercial item and, as such, did not obtain technical data rights needed to competitively purchase C-130J-unique spare parts and components or to perform depot-level maintenance core workload.<sup>5</sup> The C-130J shares many common components with earlier versions of the C-130 for which the government has established DOD and contractor repair sources. In 2004, the DOD Inspector General reported that the Air Force's use of a commercial item acquisition strategy was

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<sup>5</sup>Federal Acquisition Regulation, Part 12, Sec. 12.211, states, "Except as provided by agency-specific statutes, the Government shall acquire only the technical data and the rights in that data customarily provided to the public with a commercial item or process."

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unjustified to acquire the C-130J aircraft.<sup>6</sup> In response to the Inspector General's findings and added congressional interest, the Air Force is converting its C-130J acquisition to traditional defense system acquisition and sustainment contracts. However, because the Air Force did not acquire the necessary technical data during the acquisition process, it has less leverage to negotiate rights to data. In 2005, the Air Force approached the aircraft manufacturer to purchase technical data rights for C-130J-unique components, but the aircraft manufacturer declined to sell the data rights. Because of its lack of the needed technical data, the Air Force is planning to establish partnerships with C-130J sub-vendors that have technical data rights to components of the C-130J. Under these partnerships, Air Force depots would provide the facilities and labor needed to perform the core depot maintenance work, and the sub-vendors would provide the required technical data. C-130J program officials expressed concerns that in some instances sub-vendors may not be willing to partner. The Air Force currently expects to develop approximately 90 partnerships with as many different vendors on approximately 300 C-130J core candidate components. Program officials expressed concern about the proliferation of partnerships and said the Air Force will incur additional costs to develop, manage, and monitor these partnerships, but they had not determined what these costs will be.

- *Up-armored High-Mobility Multipurpose Wheeled Vehicles:* When the Army first developed the up-armored HMMWV in 1993, it did not purchase the technical data necessary to develop new sources of supply to increase production. Army officials anticipated fielding these vehicles to a limited number of Army units for reconnaissance and peacekeeping purposes. At that time, the Army did not obtain technical data required for the manufacture of up-armor HMMWVs. With the increasing threat of improvised explosive devices during operations in Iraq, demand for up-armored HMMWVs increased substantially, from 1,407 vehicles in August 2003 to 8,105 vehicles by September 2004. According to Army officials, the manufacturer declined to sell the rights to the technical data package. Because of the lack of technical data rights to produce up-armored HMMWVs, program officials explained they were unable to rapidly contract with alternate suppliers to meet the wartime surge requirement.

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<sup>6</sup>Department of Defense Office of the Inspector General, *Acquisition: Contracting for and Performance of the C-130J Aircraft*, D-2004-102 (Arlington, Va.: July 23, 2004).

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- *Stryker family of vehicles:* When acquiring the Stryker, the Army did not obtain technical data rights needed to develop competitive offers for the acquisition of spare parts and components. Following the initial acquisition, the program office analyzed alternatives to the interim contractor support strategy for the weapon system and attempted to acquire rights to the manufacturer's technical data package. The technical data package describes the parts and equipment in sufficient technical detail to allow the Army to use competition to lower the cost of parts. The contractor declined to sell the Stryker's technical data package to the Army. Further, according to an Army Audit Agency report, the project office stated that the cost of the technical data, even if available, would most likely be prohibitively expensive at this point in the Stryker's fielding and would likely offset any cost savings resulting from competition.<sup>7</sup>
  - *Airborne Warning and Control System aircraft:* The Air Force lacked technical data for the AWACS needed to develop competitive offers for the purchase of certain spare parts. When the Air Force recently purchased cowlings (metal engine coverings) for the AWACS, it did so on a noncompetitive, sole-source basis. The Defense Contract Management Agency recommended that the cowlings be competed because the original equipment manufacturer's proposed price was not fair and reasonable and because another potential source for the part was available. Despite the recommendation, however, the Air Force said it lacked the technical data to compete the purchase. We noted that while the Air Force and the original equipment supplier have a contract that could allow the Air Force to order technical drawings for the purpose of purchasing replenishment spare parts, the contractor had not always delivered such data based on uncertainties concerning the Air Force's rights to the data.<sup>8</sup>
  - *M4 carbine:* When the Army purchased its new M4 carbine, it did not acquire the technical data rights necessary to recompute follow-on purchases of the carbine. The M4 carbine is a derivative of the M16 rifle and shares 80 percent of its parts with the M16. However, because the remaining 20 percent of parts were funded by the developer, the Army

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<sup>7</sup>U.S. Army Audit Agency, *Stryker Contract Logistics Support Costs*, A-2006-0028-ALM (Alexandria, Va.: Dec. 6, 2005).

<sup>8</sup>GAO, *Contract Management: The Air Force Should Improve How It Purchases AWACS Spare Parts*, GAO-05-169 (Washington, D.C.: Feb. 15, 2005).

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did not have all the rights needed to compete subsequent manufacture of the M4. The Army estimated that the unit cost is about twice as much for the M4 compared with the M16, despite increases in procurement quantities for the M4 and the large commonality of parts. According to Army officials, having the technical data rights for the M16 allowed the Army to recompile the procurement of the rifle, resulting in a significantly decreased unit procurement cost.

Although we did not assess the rationale for the decisions made on technical data rights during the acquisition of these systems, several factors may complicate program managers' decisions on long-term technical data rights for weapon systems. These factors include the following:

- The contractor's interests in protecting its intellectual property rights. Because contractors need to protect their intellectual property from uncompensated use, they often resist including contract clauses that provide technical data rights to the government.
- The extent to which the system being acquired incorporates technology that was not developed with government funding. According to DOD's acquisition guidance,<sup>9</sup> the government's funding of weapon system development determines the government's rights to technical data. Weapon systems are frequently developed with some mix of contractor and government funding, which may present challenges to DOD in negotiating technical data rights with the contractor.
- The potential for changes in the technical data over the weapon system's life cycle. The technical data for a weapon system may change over its life cycle, first as the system's technology matures and later as the system undergoes modifications and upgrades to incorporate new technologies and capabilities. The potential for changes in technical data present challenges concerning when the government should take delivery of technical data, the format used to maintain technical data, and whether the data should be retained in a government or contractor repository.

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<sup>9</sup>Defense Federal Acquisition Regulations Supplement, Section 227.7103-5, Government Rights.

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- The extent to which the long-term sustainment strategy may require rights to technical data versus access to the data. According to Army officials, access to contractor technical data is sometimes presented as an alternative to the government taking delivery of the data. These officials noted that while access to technical data may allow for oversight of the contractor and may reduce the program manager's data management costs, it may not provide the government with rights to use the technical data should a change in the sustainment plan become necessary.
  - The numerous funding and capability trade-offs program managers face during the acquisition of a weapon system. Program managers are frequently under pressure to spend limited acquisition dollars on increased weapon system capability or increased numbers of systems, rather than pursuing technical data rights.
  - The long life cycle of many weapon systems. With weapon systems staying in DOD's inventory for longer periods—up to 40 years, it may be difficult for the program manager to plan for future contingencies such as modifications and upgrades, spare parts obsolescence, diminishing manufacturing support, and diminishing maintenance support.

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## DOD Acquisition Policies Do Not Specifically Address Long-term Needs for Technical Data Rights

DOD's acquisition policies do not specifically address long-term needs for technical data rights to sustain weapon systems over their life cycle, and in the absence of a DOD-wide policy, the Army and the Air Force are working independently to develop structured approaches for defining technical data requirements and securing rights to those data. DOD's current acquisition policies do not specifically require program managers to assess long-term needs for technical data rights to support weapon systems and, correspondingly, to develop acquisition strategies that address those needs. DOD guidance and policy changes, as part of the department's acquisition reforms and performance-based strategies, have deemphasized the acquisition of technical data rights. DOD concurred with but has not implemented our August 2004 recommendation for developing technical data acquisition strategies, although it has recently reiterated its intent to do so. Army and Air Force logistics officials are working independently to develop structured approaches for determining technical data rights requirements and securing long-term rights for use of those data. Logistics officials told us that their efforts would benefit from having a DOD policy that specifically addresses long-term technical data needs for weapon system sustainment.



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## DOD Acquisition Policies Do Not Specifically Require Program Managers to Assess Long-term Needs for Technical Data Rights or Develop Corresponding Acquisition Strategies

Current DOD acquisition policies do not specifically require program managers to assess long-term needs for technical data rights to sustain weapon systems, and, correspondingly, to develop acquisition strategies that address those needs. DOD Directive 5000.1, the agency's policy underlying the defense acquisition framework, designates program managers as the persons with responsibility and authority for accomplishing acquisition program objectives for development, production, and sustainment to meet the users' operational needs.<sup>10</sup> The directive, however, does not provide specific guidance as to what factors program managers should consider in developing a strategy to sustain the weapon system, including considerations regarding technical data. DOD Instruction 5000.2, the agency's policy for implementing DOD Directive 5000.1, requires program managers to ensure the development of a flexible strategy to sustain a program so that the strategy may evolve throughout the weapon system's life cycle.<sup>11</sup> In addition, DOD provides non-mandatory guidebooks to assist program managers with acquisition and product support. However, DOD acquisition policy does not specifically direct the program manager, when acquiring a weapon system, to define the government's requirements for technical data rights, an important aspect of a flexible sustainment strategy.

DOD guidance and policy changes, as part of the department's acquisition reforms and performance-based strategies, have deemphasized the acquisition of technical data rights. For example, a 2001 memorandum signed by DOD's senior acquisition official stated that the use of performance-based acquisition strategies may obviate the need for data or rights.<sup>12</sup> Also in 2001, DOD issued guidance on negotiating intellectual property rights and stated that program officials should seek to establish performance-based requirements that enhance long-term competitive

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<sup>10</sup>DOD Directive 5000.1.

<sup>11</sup>DOD Instruction 5000.2, *Operation of the Defense Acquisition System*, May 12, 2003.

<sup>12</sup>Under Secretary of Defense, Acquisition and Technology; Memorandum for—Service Acquisition Executives, General Counsel of the Department of Defense, Deputy Under Secretary of Defense (Acquisition Reform) and Director, Defense Procurement; *Reform of Intellectual Property Rights of Contractors* (Jan. 5, 2001).

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interests, in lieu of acquiring detailed design data and data rights.<sup>13</sup> In a May 2003 revision of its acquisition policy, DOD eliminated a requirement for program managers to provide for long-term access to technical data and required them to develop performance-based logistics strategies.<sup>14</sup>

Even prior to the May 2003 revision of DOD's acquisition policy, we had raised concerns about whether DOD placed sufficient emphasis on obtaining technical data during the acquisition process. We reported in 2002 that DOD program offices had often failed to place adequate emphasis on obtaining needed technical data during the acquisition process.<sup>15</sup> We recommended that DOD emphasize the importance of obtaining technical data and consider including a priced option for the purchase of technical data when considering proposals for new weapon systems or modifications to existing systems. While DOD concurred with the recommendation, it subsequently made revisions to its acquisition policies in May 2003, as noted above, that eliminated the prior requirement for the program manager to provide for long-term access to data.

DOD also has not implemented a prior recommendation we made for developing technical data acquisition strategies, although it has recently reiterated its intent to do so. In August 2004, we reported that adoption of performance-based logistics at the weapon system platform level may be influencing program managers to provide for access only to technical data necessary to manage the performance-based contract during the acquisition phase—and not to provide a strategy for the future delivery of technical data in case the performance-based arrangement failed.<sup>16</sup> We recommended that DOD consider requiring program offices to develop acquisition strategies that provide for a future delivery of sufficient

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<sup>13</sup>Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, *Intellectual Property: Navigating Through Commercial Waters* (Oct. 15, 2001).

<sup>14</sup>Prior to this May 2003 revision, the program manager, as part of the acquisition strategy, was required to develop and document a support strategy for life-cycle sustainment that addressed all applicable support requirements, to include long-term access to data to support competitive sourcing decisions. See Office of the Secretary of Defense, *Mandatory Procedures for Major Defense Acquisition Programs (MDAPS) and Major Automated Information System (MAIS) Acquisition Programs*, DOD 5000.2-R (Apr. 5, 2002).

<sup>15</sup>GAO, *Defense Logistics: Opportunities to Improve the Army's and Navy's Decision-making Process for Weapon System Support*, GAO-02-306 (Washington, D.C.: Feb. 28, 2002).

<sup>16</sup>GAO-04-715.

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technical data should the need arise to select an alternative source or to offer the work out for competition. In response to our recommendation, DOD concurred that technical, product, and logistics data should be acquired by the program manager to support the development, production, operation, sustainment, improvement, demilitarization, and disposal of a weapon system. Furthermore, the department recognized the need to take steps to stress the importance of technical data by its stated intent to include a requirement in DOD's acquisition policies (DOD Directive 5000.1 and DOD Instruction 5000.2) for the program managers to establish a data management strategy that requires access to the minimum data necessary to sustain the fielded system; to recompetete or reconstitute sustainment, if necessary, to promote real time access to data; and to provide for the availability of high-quality data at the point of need for the intended user. In the case of performance-based arrangements, that would include acquiring the appropriate technical data needed to support an exit strategy should the arrangement fail or become too expensive. Despite DOD's concurrence with our recommendation, however, efforts to implement these changes have been delayed.

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**Army and Air Force Are Working to Develop Structured Approaches for Assessing Technical Data Needs and Securing Long-term Rights to Those Data**

Army and Air Force logistics officials are independently developing structured approaches for determining when and how in the acquisition process the service should assess its requirements for technical data and secure its long-term rights for use of those data. The aim of these efforts is to ensure future sustainment needs of weapon systems are adequately considered and supported early during the acquisition process. Logistics officials from each service told us that their efforts would benefit from having a DOD policy that specifically addresses long-term technical data needs for weapon system sustainment. In the absence of a mandatory DOD requirement to address technical data, service officials said, program managers may not fully consider and incorporate long-term requirements for technical data rights during system acquisition.

According to Army and Air Force officials, their reviews of current policies and practices indicate that it is during the development of the solicitation and the subsequent negotiation of a proposed contract that the government

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is in the best position to secure required technical data rights.<sup>17</sup> This point in the acquisition process is likely to present the greatest degree of competitive pressure, and the weapon system program office can consider technical data as a criterion for evaluating proposals and selecting a contractor. In addition, the Air Force is pursuing the use of priced options negotiated in contracts for new weapon systems or modifications to existing systems. A priced option retains the option for acquiring technical data rights at some point later in the weapon system's life cycle. According to Air Force officials, priced options for technical data may ensure the government's rights to the data and control the cost of technical data in the future. The Air Force is attempting to incorporate priced options for technical data in two new weapon system acquisitions. We have previously recommended that DOD require the military services to consider the merits of including a priced option for the purchase of technical data when proposals for new weapon systems or modifications to existing systems are being considered.<sup>18</sup>

## Army Technical Data Efforts

The Army established a working group in March 2005 to serve as a forum for determining requirements for and resolving issues associated with the management and use of technical data.<sup>19</sup> One task of the working group is to develop a structured process for determining what technical data are needed for any given system. Another task is to clarify technical data policy and reconcile the best practices of acquisition reform with the need for technical data rights in support of weapon system acquisition and sustainment. The group is also reviewing pertinent federal and DOD policy

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<sup>17</sup>DOD's acquisition process is structured into discrete phases separated by major decision points (called milestones or decision reviews), with a number of key activities to provide the basis for comprehensive management and informed decision making. The number of phases and decision points are tailored to provide a management structure for reviewing and approving acquisition programs as they move from concept refinement to system development and demonstration. In the acquisition process, a contract solicitation is ultimately used to communicate the government's requirements.

<sup>18</sup>As discussed earlier, DOD has not incorporated this recommendation into its acquisition policy. See GAO-02-306.

<sup>19</sup>To focus on Army activities related to the management of engineering and technical data, product data, and the reduction of total ownership costs for weapon systems, the Assistant Secretary of Army for Acquisitions, Logistics and Technology in April 2004 delegated authority and responsibilities for managing these activities to the Commander, U.S. Army Materiel Command. In March 2005, the Command's Deputy Chief of Staff for Operations chartered the product data and engineering working group, which consists of representatives from Army headquarters, major commands, program executive officers, and Army Materiel Command subordinate commands.

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and guidance, as well as instruction materials used by the Defense Acquisition University for acquisition career training, with the aim of identifying ambiguities or inconsistencies. This effort focuses on areas of the acquisition process where technical data and acquisition intersect, such as systems engineering, configuration management, data management, contracting, logistics, and financial management. Some anticipated products from the group include the following proposed items:

- changes to integrate and clarify policy on technical data and weapon system acquisition policy,
- draft instruction material to better define and explain the value of technical data rights and the uses of technical data throughout the weapon system life cycle, and
- a comprehensive primer to provide the acquisition professional a guide for ensuring that there is a contract link between weapon system acquisition and sustainment strategies on the one hand and the technical data strategy on the other.

According to members of the working group, if the government's rights have not been protected in the contract, then it may be necessary to negotiate the rights to use the data at a later date, which could be cost-prohibitive. Army Materiel Command officials told us that having a DOD policy on when and how in the acquisition process technical data rights should be addressed would help them as they revise their policy and guidance. The product data working group plans to complete its preliminary work by the end of fiscal year 2006.

In January 2006, the U.S. Army's Tank-automotive and Armaments Command completed a study evaluating the importance of technical data over the life cycle of a weapon system, with particular emphasis on sustainment. While the Army had not yet approved and released the final report, members of the study team indicated the following:

- Previous DOD guidance on the data rights required for performance-based logistics contracts has been ambiguous and open to misinterpretation. This ambiguity has resulted in many programs' not acquiring rights to technical data for long-term weapon system sustainment. Lack of technical data rights leads to risks associated with the inability to broaden the industrial base to support Global War on Terrorism surge requirements.

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- The current process to identify the government's technical data rights is ad hoc and unstructured.
  - The government's rights to technical data are independent of the logistics support strategy—whether government (organic) support, traditional contract logistics support, or performance-based logistics.

According to team members, potential recommendations from the study are to establish a new policy requiring the program manager to complete a technical data rights decision matrix and to weigh the cost of acquiring technical data against program risk. The technical data rights should be negotiated as early as possible in the contracting process and ideally should be used as a source selection factor. The study team further states that the government should ensure that rights to use the data are secured in the system development and demonstration contract.

#### Air Force Technical Data Efforts

Air Force officials are currently reviewing and developing proposed changes to weapon system acquisition and support policies to require that sustainment support and technical data rights decisions be made early in weapon system acquisition. These efforts are part of the Air Force Materiel Command's product support campaign, an effort to better integrate the activities of the service's acquisition and logistics communities.<sup>20</sup> Air Force officials involved with the campaign said their efforts could be facilitated if DOD's acquisition policy were revised to more clearly direct program managers when and how they are to define and secure the government's data rights during weapon system acquisition. The campaign's policy focus team is working on the efforts that would provide a more structured approach to early determination of the government's technical data rights:

- revised policies to require that sustainment support decisions be made and technical data rights be defined during the technology phase of acquisition but prior to system development and demonstration;

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<sup>20</sup>The Air Force product support campaign is one of three efforts that constitute the Air Force Materiel Command's sustainment transformation initiative. The other two efforts are depot maintenance transformation and purchasing and supply chain management. The product support campaign is a partnership among the Air Force Materiel Command, Headquarters Air Force Acquisition Integration, and Logistics, Installations and Mission Support to establish six process focus teams to address information workflow, workforce development, supplier management, policy, processes, and expectation management.

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- a standard template for contract solicitations, to be used to guide the acquisition workforce in securing technical data rights;
  - contract language to include a priced option for the delivery of technical data and rights for use of data, which would be negotiated and included as part of the system development and demonstration solicitation; and
  - an independent logistics assessment process, to provide an objective review of the acquisition program office's sustainment support plans before major milestone decisions.

In May 2006, the Secretary of the Air Force directed that the acquisition of technical data and associated rights be addressed specifically in all acquisition strategy plans, reviews, and associated planning documents for major weapon system programs and subsequent source selections. The Secretary stated these actions are needed to address challenges in meeting legislative requirements to maintain a core logistics capability and to limit the percentage of depot maintenance funds expended for contractor performance. The competitive source selection process, according to the Secretary, provides the best opportunity to address technical data requirements while at the same time brokering the best deal for the government in regard to future weapon systems sustainment.

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## Conclusions

Under current DOD acquisition policies, the military services lack assurance that they will have the technical data rights needed to sustain weapon systems throughout their life cycle. We have previously made recommendations that DOD enhance its policies regarding technical data. DOD has concurred with these recommendations but has not implemented them. In fact, DOD has de-emphasized the acquisition of technical data rights as part of the department's acquisition reforms and performance-based strategies. Our current work, however, shows that the services face limitations in their sustainment plans for some fielded weapon systems due to a lack of needed technical data rights. Furthermore, program managers face numerous challenges in making decisions on technical data rights—decisions that have long-term implications for the life-cycle sustainment of weapon systems. Army and Air Force logistics officials have recognized weaknesses in their approaches to assessing and securing technical data rights, and each service has begun to address these weaknesses by developing more structured approaches. However, current DOD acquisition policies do not facilitate these efforts. Unless DOD assesses and secures its rights for the use of technical data early in the weapon

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system acquisition process when it has the greatest leverage to negotiate, DOD may face later challenges in developing sustainment plans or changing these plans as necessary over the life cycle of its weapon systems. Delaying action in acquiring technical data rights can make these data cost-prohibitive or difficult to obtain later in the weapon system life cycle, and can impede DOD's ability to comply with legislative requirements, such as core capability requirements.

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## Recommendations for Executive Action

To ensure that DOD can support sustainment plans for weapon systems throughout their life cycle, we recommend that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology, and Logistics) to specifically require program managers to assess long-term technical data needs and establish corresponding acquisition strategies that provide for technical data rights needed to sustain weapon systems over their life cycle. These assessments and corresponding acquisition strategies should

- be developed prior to issuance of the contract solicitation;
- address the merits of including a priced contract option for the future delivery of technical data;
- address the potential for changes in the sustainment plan over the weapon system's life cycle, which may include the development of maintenance capability at public depots, the development of new sources of supply to increase production, or the solicitation of competitive offers for the acquisition of spare parts and components; and
- apply to weapon systems that are to be supported by performance-based logistics arrangements as well as to weapon systems that are to be supported by other sustainment approaches.

We also recommend that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology, and Logistics) to incorporate these policy changes into DOD Directive 5000.1 and DOD Instruction 5000.2 when they are next updated.



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## Agency Comments and Our Evaluation

In commenting on a draft of this report, DOD concurred with our report and recommendations. DOD stated that the requirement for program managers to assess long-term technical data needs and establish corresponding strategies will be incorporated into DOD Instruction 5000.2 when it is next updated. If DOD updates its acquisition policy as stated, we believe this action will meet the intent of our recommendations. DOD's response is included in appendix II.

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## Scope and Methodology

We conducted work at the Office of the Secretary of Defense, the Army, the Navy, and the Air Force. The specific offices and commands we visited are listed in the attached briefing slides contained in appendix I.

To identify sustainment plans for fielded weapon systems that may have been affected by the technical data rights available to the government, we met with Army and Air Force acquisition and logistics officials responsible for 11 weapon systems. We did not identify technical data issues affecting sustainment for three of these systems and excluded these systems from our subsequent review. We also excluded a weapon system—the Buffalo mine-protected route clearing equipment—that was acquired under the Army's rapid fielding initiative to meet emergency needs. For the other seven weapon system programs—the C-17 aircraft, F-22 aircraft, C-130J aircraft, Up-armored High-Mobility Multipurpose Wheeled Vehicle, Stryker family of vehicles, Airborne Warning and Control System aircraft, and M4 carbine—we obtained information on the service's requirement for rights to use the data, their success in obtaining data rights from the manufacturer, and the effect that a lack of data rights had on system sustainment plans. We did not assess the rationale for the decisions made on technical data rights during system acquisition, nor did we determine the extent that program offices complied with acquisition policies regarding technical data that existed at the time of the acquisition. However, we collected comments from acquisition and logistics personnel on the factors that complicate program managers' decisions on long-term technical data rights for weapon systems.

To examine the requirements for obtaining technical data rights under current DOD acquisition policies, we analyzed current DOD acquisition policies. Our review encompassed DOD-wide policies, including DOD Directive 5000.1 and DOD Instruction 5000.2, as well as service-specific policies. We discussed these policies with DOD and service officials responsible for developing acquisition and logistics policies, preparing

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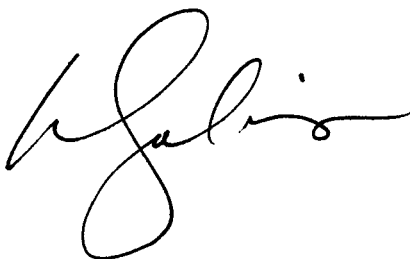
system acquisition strategies, and implementing sustainment plans to obtain their views on the importance of considering technical data requirements during the acquisition process. To determine DOD's plans to revise acquisition policy in response to a previous recommendation we made on technical data, we reviewed DOD correspondence and met with officials at the Office of the Under Secretary of Defense (Acquisition, Technology, and Logistics).

We also met with Army and Air Force logistics officials to obtain information on their efforts to assess acquisition policies and make appropriate changes that would provide a structured process for assessing and securing government rights to technical data early in weapon system acquisition. We interviewed Army officials leading the Army Material Command's Product Data Engineering Working Group and Air Force officials addressing acquisition and logistics policies as part of the Air Force Material Command's Product Support Campaign. We also reviewed available documentation on the objectives and potential outcomes of these initiatives.

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We are sending copies of this report to the Secretary of Defense and to the Secretaries of the military services. Copies of this report will be made available to others upon request. In addition, the report will be available at no charge on our Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-5140 or [solisw@gao.gov](mailto:solisw@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix III.



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Director, Defense Capabilities and Management

# GAO's Preliminary Observations on the Department of Defense's Acquisition of Technical Data to Support Weapons Systems



## Preliminary Observations on DOD's Acquisition of Technical Data to Support Weapons Systems

**Briefing for the House Committee on Armed Services**

**February 27, 2006**



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## Introduction

- The House Committee on Armed Services asked whether DOD policies limit the services from purchasing technical data when acquiring new weapons systems, and thereby increase the systems' life-cycle sustainment costs and delay the repair of mission-essential items.
- The Committee requested in H.R. 109-89 that GAO review the services' technical data policies and practices affecting life-cycle costs and availability of weapons systems.
- GAO previously examined this issue in a report on performance-based logistics (GAO-04-715, August 2004) and recommended policy changes for DOD. Specifically, DOD should:
  - “consider requiring program offices, during weapon system acquisition, to develop acquisition strategies that provide for a future delivery of sufficient technical data to enable the program office to select an alternative source—public or private—or to offer the work out for competition if the performance-based arrangement fails or becomes prohibitively expensive.”



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## Objectives

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GAO will analyze and report on the following:

- To what extent DOD policies limit the services from purchasing technical data when acquiring new weapons systems;
- The status of DOD's plans to revise acquisition policy in response to the previous GAO recommendation on technical data;
- The costs for obtaining access in order to view, modify, or distribute technical data relating to the sustainment of procured systems; and
- The amount of time required to reach back to the system manufacturer for technical data and what impact, if any, that delay has on repairing or modifying fielded systems.



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## Synopsis of Observations

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- Under DOD policy, program managers are not limited from obtaining tech data rights during acquisition— but neither are they required to do so.
  - DOD has been slow in responding to our recommendation in GAO-04-715 but has revised discretionary guidance that addresses tech data rights.
  - Available budget figures indicate limited cost growth for technical data supporting fielded weapons systems.
  - Although information on technical data issues affecting field maintenance is limited, our review showed maintenance units in Southwest Asia did not experience systemic problems in obtaining tech data. Army readiness data we reviewed did not indicate low equipment readiness rates due to maintenance.
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## Scope and Methodology

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- OSD USD/ATL, Logistics and Materiel Readiness
  - Army Headquarters
    - Army Materiel Command (AMC), Fort Belvoir, Va.
    - Tank-Automotive and Armaments Command (TACOM), Warren, Michigan, and Rock Island, Ill.
    - U.S. Army Forces Command (FORSCOM), Fort McPherson, Ga.
    - 1st Cavalry Division, Fort Hood, Texas
  - Navy Headquarters
    - Naval Aviation Systems Command (NAVAIR), Patuxent River, Md.
    - Naval Sea Systems Command (NAVSEA), Washington, D.C.
  - Air Force Headquarters
    - Air Force Materiel Command (AFMC), Wright-Patterson Air Force Base, Ohio
    - Aeronautical Systems Center (ASC), Wright-Patterson Air Force Base, Ohio
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## Scope and Methodology (cont.)

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- To determine the status of DOD's efforts to implement the recommendation of our prior report, we analyzed DOD and service acquisition policy and guidance, interviewed DOD and service officials, and collected DOD correspondence addressing our recommendation.
  - To determine costs for obtaining access to contractor technical data, we collected and analyzed operations and maintenance budget data from the services. Our review focused on costs associated with sustaining fielded systems.
  - To determine the impact of maintenance delays that might be caused by the need to obtain technical data from the manufacturer, we collected and analyzed non-mission capable reports on equipment managed by the US Army Tank-Automotive and Armaments Command. We also contacted logistics assistance representatives to collect information on experiences with technical data in the field.
  - We also collected acquisition and logistic support information on 7 Army systems—Abrams, Bradley, HMMWV, M-88, Stryker, mine clearing equipment, and vehicle armor kits; and 4 Air Force systems—C-17, C-130J, F-117, and the F22.
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## Background

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### WHAT ARE TECHNICAL DATA?

Technical data are recorded information of a scientific or technical nature, regardless of the form or method of the recording. Typically, technical data refer to:

- Technical data packages: All applicable drawings, associated lists, specifications, standards, performance requirements, quality assurance provisions, and packaging details necessary to support an acquisition strategy and ensure the adequacy of item performance.
- Technical manuals: Publications that contain instructions for the installation, operation, maintenance, training, and support of weapons systems. A maintenance technical manual normally includes maintenance procedures, parts lists or parts breakdown, and related technical information or processes.



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## Background (cont.)

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### WHY ARE TECHNICAL DATA IMPORTANT?

The private sector and the government often have important competing interests in technical data rights.

- A company's interest in protecting its intellectual property (IP) from uncompensated exploitation is of paramount importance—such that they often resist including the contract clauses providing tech data rights to government.
- The government needs to have adequate rights to support its weapons systems, including developing repair and maintenance procedures, selecting alternate repair sources, and procuring spare parts competitively.



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## Background (cont.)

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### WHEN ARE TECHNICAL DATA RIGHTS ACQUIRED, AND HOW ARE THESE DATA MANAGED?

- Provision for acquiring weapons systems tech data rights, access, and delivery should be made early in acquisition.
  - Tech data rights decisions made during acquisition will affect government's ability to support weapons systems throughout increasingly longer life cycles—up to approximately 40 years.
  - Delaying action in acquiring technical data rights can make them cost prohibitive or difficult to obtain.
- Technical data are jointly managed and may be stored at either the government's or contractor's repository.



## **To what extent do DOD policies limit the services from purchasing technical data when acquiring new weapons systems?**

Under DOD policy, program managers are not limited from obtaining technical data rights during acquisition—but neither are they required to do so.

- DOD Directive 5000.1 and Instruction 5000.2 provide DOD's overall acquisition policy. The Defense acquisition guidebook and product support guide offer additional discretionary guidance.
  - 5000.1 "The Defense Acquisition System" —Designates the program managers as the persons with responsibility and authority for accomplishing acquisition program objectives for development, production, and sustainment to meet the users' operational needs.
  - 5000.2 "Operation of the Defense Acquisition System" —Instructs program managers to ensure development of a flexible strategy to sustain a program so that the strategy may evolve throughout the weapons system life cycle.
  - Discretionary guidebooks—Guide program managers to determine minimum data needs to support sustainment strategy over life cycle of system.
- DOD policy does not require program managers to document their strategy for ensuring long-term access to tech data over the life cycle of a weapon system.



## **To what extent do DOD policies limit the services from purchasing technical data when acquiring new weapons systems? (cont.)**

Services have adopted different policies regarding technical data.

- Army's acquisition policy (AR 70-1 and AR 700-127)
  - Requires program manager to develop logistics support strategy, including description of how tech data rights or long-term access to tech data is to be obtained.
- Navy's acquisition policy (SECNAV Instructions 4105.1A and 5000.2c, and NAVSO P-3692)
  - An independent team is required to assess the adequacy of the program manager's logistics support plan, including technical data. However, there is no requirement compelling a system program manager to address how tech data rights or long-term access to technical data is to be obtained.
- Air Force's acquisition policy (AF policy directives 63-1 and 20-5, and AF Instructions 63-107 and 63-101)
  - Requires program manager to address tech data in a product support strategy.



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## **To what extent do DOD policies limit the services from purchasing technical data when acquiring new weapons systems? (cont.)**

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The services' continuing efforts to require program managers to develop tech data requirements early in acquisition process highlight a gap in DOD policy:

- Army
  - Product Data and Engineering Working Group
  - TACOM's draft technical data rights study
- Navy
  - Planned revisions to 5000.2c
  - Independent logistics assessment handbook
  - Air Force
- Product Support Campaign
  - Developing an independent logistics assessment process

Service officials responsible for these efforts believe their work would be facilitated by a DOD policy providing clear direction to the program managers to develop a tech data strategy early in the acquisition process.



## **To what extent do DOD policies limit the services from purchasing technical data when acquiring new weapons systems? (cont.)**

In the absence of DOD acquisition policy requiring a technical data strategy, program managers may not adequately consider the need to acquire technical data rights because:

- Program managers are under financial pressure to use available funds to buy more inventory or capability rather than technical data.
- DOD has deemphasized the requirement of acquiring rights to tech data:
  - The “use of performance-based acquisition strategies...may obviate the need for data and/or rights.” USD (AT&L) memo on the reform of intellectual property rights of contractors, Jan. 5, 2001.
  - “Finally, program officials should seek to establish performance-based requirements that enhance long-term competitive interests, in lieu of acquiring detailed design data and data rights.” DOD guide to negotiating intellectual property rights, Oct. 15, 2001.
  - DOD acquisition policy (revised May 2003) eliminated requirement for program managers to ensure long-term access to technical data and required them to develop performance-based logistics strategies.



## **What is the status of DOD's plans to revise acquisition policy in response to the previous GAO recommendation on technical data?**

DOD has been slow in responding to our recommendation to revise its technical data acquisition policy.

- In August 2004, GAO compared the practices of DOD with those of the private sector for acquiring new systems. We found that the private sector typically acquires the technical data for new systems, while DOD program managers often do not acquire the technical data, opting instead to buy larger quantities or greater system capability with available funding.
  - GAO recommended that DOD consider requiring program offices to develop strategies providing for future delivery of technical data to allow selection of alternate sources or offering work for competition.
  - DOD concurred, stating it would update its DOD 5000 regulations to include this requirement. This change was to be accomplished by the Defense Acquisition Policy Working Group (DAPWG).
  - DOD has been delayed in updating its 5000 regulations due to other DAPWG priorities (i.e., the Quadrennial Defense Review). DOD recently reaffirmed its intent to implement our recommendation when DAPWG returns to updating the 5000 regulations in May 2006.





## What are the costs for obtaining access in order to view, modify, or distribute technical data relating to the sustainment of procured systems?

There is limited visibility into technical data funding; available operation and maintenance budget figures for fielded systems indicate limited cost growth. Most changes that we analyzed for FY06 were due to a shift from procurement to sustainment funding as systems are fielded.

Budget Requirements for Technical Data			
(\$ in millions)	FY04	FY05	FY06
Army	\$11.9	\$19.1	\$33.8
NAVAIR**	10.3	14.0	11.7
NAVSEA	*	*	*
Air Force	63.1	57.7	62.4
<b>Total</b>	<b>\$85.2</b>	<b>\$90.8</b>	<b>\$107.9</b>

\* data not available

\*\* Amounts for FY04 and FY05 are actuals

Source: Service operations and maintenance budget data.



## **What are the costs for obtaining access in order to view, modify, or distribute technical data relating to the sustainment of procured systems? (cont.)**

- Tech data budget requirements are often embedded in larger budget accounts. For example, the Army's sustainment systems tech support (SSTS) program supports various engineering sustainment requirements, including tech data. The Army reported a \$116 million increase in its fiscal year 2006 SSTS budget.
  - Based on an analysis of the SSTS account by Army officials, only about \$15 million of increase is due to increased technical data requirements, which resulted primarily from cessation of Abrams Tank and Bradley Fighting Vehicle upgrade programs.
  - Remaining \$101 million of the increase is due to programs not involving technical data requirements, such as obsolescence management of replacement parts and digitization of maintenance technical manuals.
- Even within individual contracts, technical data costs may not be apparent. According to service contracting officials, some weapon systems support contracts do not separately price technical data. Examples are the Air Force's C-130J and F117.



## What are the costs for obtaining access in order to view, modify, or distribute technical data relating to the sustainment of procured systems? (cont.)

Top five fiscal year 2006 technical data cost drivers account for approximately 60 percent of the Army's \$33.8 million requirement.

Top 5 Technical Data Cost Drivers in FY06 for Army Systems				
(\$ in million)		Total requirements		
Army system		FY04	FY05	FY06
Abrams Tank	\$	1.37	\$ 2.75	\$ 6.76
Bradley Fighting Vehicle		0.74	0.80	6.13
Tow and Patriot Missiles		2.45	2.41	2.67
Hellfire Missile		-	-	2.48
M270 and M270A Launcher		-	0.91	2.13

Source: Army operation and maintenance budget data.



## What are the costs for obtaining access in order to view, modify, or distribute technical data relating to the sustainment of procured systems? (cont.)

Top five fiscal year 2006 technical data cost drivers account for approximately 67 percent of NAVAIR's \$11.7 million requirement.

Top 5 Technical Data Cost Drivers in FY06 for NAVAIR Systems				
(\$ in million)		Total requirements		
NAVAIR system		FY04*	FY05*	FY06**
AV-8	\$	1.45	\$ 2.48	\$ 2.39
F-18 A/D		0.79	2.09	2.22
H-1		0.55	1.14	1.56
H-60		0.75	0.83	0.86
P-3		0.43	1.23	0.85

\* - Cost data

\*\* - Budget data

Source: Navy operation and maintenance budget and cost data.



## What are the costs for obtaining access in order to view, modify, or distribute technical data relating to the sustainment of procured systems? (cont.)

Top five fiscal year 2006 technical data cost drivers account for approximately 46 percent of the Air Force's \$62.4 million requirement.

<b>Top 5 Technical Data Cost Drivers in FY06 for Air Force Systems</b>			
(\$ in million)		Total requirements	
Air Force system	FY04	FY05	FY06
F-16	9.77	8.50	8.81
F-15	5.10	5.27	5.53
C-130	5.50	5.03	4.80
Combat Rescue and Recovery Aircraft	2.15	2.15	5.10
B-1b	5.61	4.47	4.63

Source: Air Force operation and maintenance budget data.



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## How much time is needed to return to vendor for technical data, and what impact do delays have on repairing or modifying fielded systems?

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Although information on technical data issues affecting field maintenance is limited, our review showed maintenance units in Southwest Asia did not experience systemic problems in obtaining tech data. Army readiness data we reviewed did not indicate low equipment readiness rates due to maintenance.

- Logistics assistance representatives' reports indicated instances where field maintainers initially lacked technical data (e.g., repair manuals), but these cases were infrequent and subsequently resolved. Some new equipment items that were rapidly fielded into service lacked accompanying technical data.
- Readiness rates for equipment in Southwest Asia theaters of operations have not fallen below acceptable levels, except in four minor instances, according to recent Army data.



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## Conclusions

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While DOD has issued discretionary guidance that addresses technical data rights, current DOD policy does not require program managers to document their strategy for ensuring long-term access to tech data. We continue to believe that our prior recommendation in GAO-04-715 for DOD to add a technical data requirement to its acquisition policy is valid. In the absence of such policy, the government may find itself unprepared to support its weapons systems over their lifecycle, to include developing repair and maintenance procedures, selecting alternate repair sources should existing support fail or become too expensive, and procuring spare parts competitively. Further, while the services have initiatives under way to address these shortfalls, the success of their efforts would be enhanced by clear DOD policy on developing tech data requirements.

# Comments from the Department of Defense



DEPUTY UNDER SECRETARY OF DEFENSE FOR  
LOGISTICS AND MATERIEL READINESS  
3500 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3500

JUN 29 2006

Mr. William M. Solis  
Director, Defense Capabilities and Management  
U.S. Government Accountability Office  
441 G Street, N.W.  
Washington, DC 20548

Dear Mr. Solis:

This is the Department of Defense (DoD) response to the GAO draft report, "WEAPONS ACQUISITION: DoD Should Strengthen Policies for Assessing Technical Data Needs to Support Weapon Systems," dated June 8, 2006, (GAO Code 350828/GAO-06-839).

The Department concurs with the report and the recommendations. As the Department has previously agreed, guidance on technical data rights will be incorporated into DoD Instruction 5000.2 when it is next updated. Detailed comments on the GAO recommendations are provided in the attachment. The Department appreciates the opportunity to comment on the draft report.

Sincerely,

  
Jack Bell

Attachment:  
As stated





GAO DRAFT REPORT – DATED JUNE 8, 2006  
GAO CODE 350828/GAO-06-839

“WEAPONS ACQUISITION: DoD Should Strengthen Policies for Assessing Technical Data  
Needs to Support Weapon Systems”

DEPARTMENT OF DEFENSE COMMENTS  
TO THE RECOMMENDATIONS

**RECOMMENDATION 1:** The GAO recommended that the Secretary of Defense, direct the Under Secretary of Defense (Acquisition, Technology and Logistics) to specifically require program managers to assess long-term technical data needs and establish corresponding acquisition strategies that provide for technical data rights needed to sustain weapon systems over their life cycle. These assessments and corresponding acquisition strategies should:

- be developed prior to issuance of the contract solicitation;
- address the merits of including a priced contract option for the future delivery of technical data;
- address the potential for changes in the sustainment plan over the weapon system’s life cycle, which may include the development of maintenance capability at public depots, the development of new sources of supply to increase production, or the solicitation of competitive offers for the acquisition of spare parts and components; and
- apply to weapon systems that are to be supported by performance-based logistics arrangements as well as to weapons systems that are to be supported by other sustainment approaches. (p. 15/GAO Draft Report)

**DOD RESPONSE:** Concur. The requirement for program managers to assess long-term technical data needs and establish corresponding acquisition strategies will be incorporated into DoD Instruction 5000.2 when it is next updated.

**RECOMMENDATION 2:** The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense (Acquisition, Technology and Logistics) to incorporate these policy changes into DoD Directive 5000.1 and DoD Instruction 5000.2 when they are next updated (p. 15/GAO Draft Report).

**DOD RESPONSE:** Concur. When next updated, DoD Instruction 5000.2 will incorporate the requirement for program managers to assess long-term technical data needs and establish corresponding acquisition strategies.

Now on pp. 18-19.

Now on p. 19.

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# GAO Contact and Staff Acknowledgments

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## GAO Contact

William M. Solis, (202) 512-5140 or [solisw@gao.gov](mailto:solisw@gao.gov)

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## Acknowledgments

In addition to the contact named above, Thomas Gosling, Assistant Director; Larry Junek; Andrew Marek; John Strong; Cheryl Weissman; and John Wren were major contributors to this report.

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